

What is claimed is:

1 1. A method of producing a metal halide arc tube comprising
2 the steps of providing an arc tube body having first and
3 second ends; inserting a first electrode assembly and a second
4 electrode assembly into the arc tube body; creating first,
5 second, third and fourth seals in the arc tube body, each seal
6 being formed by heating the arc tube body at a desired
7 location while maintaining a gas pressure inside the arc tube
8 body lower than the pressure outside the arc tube body;
9 removing a first portion of the arc tube body, the first
10 portion comprising the first end and one of the seals; and
11 removing a second portion of the arc tube body, the second
12 portion comprising the second end and another of the seals.

1 2. A method according to claim 1, wherein the first seal is
2 formed before the second, third, and fourth seals, the first
3 seal being formed between a central portion of the first
4 electrode assembly and the first end.

1 3. A method according to claim 2, further comprising the step
2 of maintaining a reduced gas pressure inside the arc tube body
3 while forming the first seal, said reduced gas pressure being
4 maintained by blanking off the second end and evacuating gas
5 from the first end.

1 4. A method according to claim 2, further comprising the step
2 of positioning the first electrode assembly between the first
3 end and an arc chamber, said arc chamber being essentially
4 centrally located in said arc tube body.

1 5. A method according to claim 2, wherein the second seal is
2 formed before the third and fourth seals, the second seal
3 being formed so as to encompass a central portion of the first
4 electrode assembly.

1 6. A method according to claim 5, further comprising the step
2 of positioning the first electrode assembly between the first

1 14. A method according to claim 1, wherein a reduced gas
2 pressure in the arc tube body is maintained while forming the
3 third seal by introduction of a fill gas at a pressure of 20-
4 500 torr.

1 15. A method according to claim 1, wherein the arc tube body
2 is a quartz arc tube body.

1 16. A method of producing a metal halide arc tube comprising
2 the steps of providing a quartz tube comprising a bulbous
3 section, a first arm and a second arm, each arm extending from
4 the bulbous section, and each arm having an outer end;
5 inserting a first electrode assembly and a second electrode
6 assembly into the quartz tube so that the electrode assemblies
7 are a predetermined distance apart from each other and one
8 electrode assembly is disposed in each arm, each electrode
9 assembly comprising a foil, a spring clip attached to the foil
10 and extending away from the bulbous section, a shank attached
11 to the foil and extending toward the bulbous section, and a
12 coil attached to the shank; reducing the gas pressure in the
13 quartz tube by evacuating gas from the first arm's outer end
14 while blanking off the second arm's outer end; creating a first
15 seal in the first arm of the quartz tube between the electrode
16 assembly disposed in the first arm and the outer end of the
17 first arm by rotating and heating the quartz tube at the
18 desired location until the quartz tube melts and collapses;
19 then evacuating gas from the second arm's outer end to reduce
20 pressure in the quartz tube between the first seal and the
21 second arm's outer end; creating a second seal in the first arm
22 at the location of the foil of the electrode assembly in the
23 first arm by rotating and heating the quartz tube until the
24 quartz tube melts and collapses on the foil; placing a dose of
25 mercury and a dose of halide compound into the bulbous
26 section; pressurizing the quartz tube between the second seal
27 and the second arm's outer end with a fill gas to a pressure
28 of 20-500 torr; creating a third seal in the second arm of the
29 quartz tube between the electrode assembly disposed in the

30 second arm and the outer end of the second arm by rotating and
31 heating the quartz tube at the desired location until the
32 quartz tube melts and collapses; creating a fourth seal in the
33 second arm of the quartz tube at the location of the foil by
34 rotating and heating the quartz tube at the desired location
35 until the quartz tube melts and collapses; applying an
36 external coating to the quartz tube; removing a section of
37 each arm between the outer end of the arm and the foil; and
38 trimming each spring clip to a desired length.

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